

003970

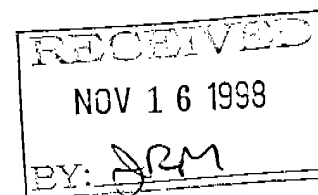
November 15, 1998

Bruce Halstead
US Fish and Wildlife Service
1125 16th St. Room 29
Arcata, CA 95521

and

John Munn
CA Department of Forestry
1416 Ninth Street
Sacramento
CA 95814

Post-It [®] Fax Note	7671	Date 11/16/98	# of pages 11
To JOHN MUNN	From FRASER SHILLING		
Co./Dept.	Co.		
Phone #	Phone # 530 752 7859		
Fax #	Fax #		



Dear Mr. Halstead and Mr. Munn:

Re: Permit #s PRT-828950 and 1157 and SYP 96-002

This letter consists of comments on the Headwaters Habitat Conservation Plan (HHCP, Pacific Lumber Co.), the Sustained Yield Plan (SYP), and the Environmental Impact Report/Study (EIS/R) for the HHCP/SYP. The comments are divided into sections to make reading easier without suggesting that the processes are independent of each other.

Comments referring to the HHCP/SYP are intended also to address Alternative 2 in the EIS/R and should be interpreted as such. My overall recommendation is that the alternative identified within the EIS/R as the one leading to the least environmental impact (Alternative 3) be adopted with three simple modifications: 1) adoption of the science-based riparian buffer strategy for SMZs developed by Don and Nancy Erman (Sierra Nevada Ecosystem Project report, 1996), 2) prohibition of logging or road-building on slopes >30% or prone to mass-wasting, and 3) adoption of the leave-tree strategy of the County of Santa Cruz for redwood tree size class and distribution for permitted lands outside those affected by #'s 1 and 2.

FS-1

Mitigation

The Headwaters Reserve purchase is "not mitigation for PALCO's proposed HCP/SYP" (EIS/R, p. S-8), however, it is described as mitigation for marbled murrelet habitat loss (p. S-19), loss of unfragmented interior late-successional forest (p. S-22), and as an HCP measure intended to protect salmonids (HHCP/SYP, Vol. 4, Part D, p. 84, Table 6 and other locations). There is no legal or reasonable justification for the Reserve acquisition using public funds to be considered as a mitigation measure under the HCP, the statutory goal of which is to minimize impacts and mitigate for them in the permitted property. The Reserve will fall outside the permitted area and therefore it is not appropriate to consider it as an area of mitigation by the company. Reserve areas set aside outside the acquired Reserve (as depicted in Alternative 4) would potentially qualify as mitigation areas.

FS-2

Baseline Condition

The PALCO holdings are recognized both for being refugia for some of the last successfully spawning coho salmon in Northern California and for having some of the most massive slope and road failures and impacted wildlife of private forestlands. The baseline condition for most of the holdings outside the publicly-acquired groves is relatively poor. This is recognized in the HHCP. Residual stands and groves of old-growth provide islands of habitat for avian, mammalian, amphibian, and fish species among the surrounding cutover and recovering lands. Thus, any further destruction of the forest on this holding through extensive clearcut logging and road-building, is likely to result in irreversible harm to resident legally-protected species for the foreseeable future. If the baseline condition was improved upon by planned actions through restoration activities, it is conceivable that this situation could change. However, the HHCP/SYP does not propose to do this, instead the proposed take (through the Section 10 ITP) is intended to be mitigated for by not cutting as much as could theoretically (though not necessarily legally) be cut on this ownership. This is not a defensible mitigation action given the possibility of carrying out affordable alternatives that would have far less impact and possibly not reduce the lands below their current degraded condition.

FS-
3

Aquatic Resources

The HHCP states that PALCO rejected from the outset RMZ strategies that would cause "significant economic harm" to the company (HHCP, Vol. IV, Part D, 1.3.1). Although this makes sense economically, no explanation is made of the basis for the claim that the company could suffer some harm from more protective measures than those proposed. Thus, there is no way to evaluate the unjustified claim that the company made, except by educated guesses. In addition, the standard for "economic harm" and "the maximum extent practicable/feasible" is not usually set by the economic or applicant unit. It is reasonable to conclude that the company wanted to minimize economic costs regardless of the adequacy of the measures proposed. The measures should therefore not be viewed in the context of potential harm to the company since no exploration of this potential harm has been made.

FS-
4

Water for use by humans and as habitat for wildlife has been central to many of the disputes surrounding the Headwaters Forest. The HHCP is intended to mitigate for take of habitat for listed species dependent on intact water courses. The coho salmon has received much of the attention in this region because of its commercial and cultural importance, listed status, and rapid decline over the last few decades. The salmon and related salmonids (e.g., steelhead) require habitat parameters that fall within certain boundaries, for example temperature, sediment load, and water flow. Juvenile salmonids have prey requirements that are not usually recognized in the planning of land use. For example, the natural composition of the aquatic invertebrate community can be considered critical to the life cycle of salmonids.

a) Aquatic invertebrates:

Larval and adult forms of aquatic invertebrates are the primary prey of juvenile salmonids. If they change in abundance or species composition, then the salmonids may suffer due to their adaptation to certain conditions. The HHCP/SYP allows for logging in the riparian zones of ephemeral and non-fish-bearing permanent streams. This will result in negative impact on aquatic invertebrates in several

FS-
5

ways. Changes in temperature, delivery of fine sediments and particulate organic matter, and changes in nutrients/dissolved oxygen concentrations will all affect which types of invertebrates dominate in the aquatic community. For example, logging has been shown to increase the abundance of phytoplankton (unicellular algae) in streams, which in turn benefits the aquatic insects that feed on them. This may have local benefits for certain stages of specific fish species. However, for stages that are unable to feed on these particular insects, and for downstream aquatic communities that are changed in composition due to the effects of increased nutrient load, this is not beneficial. Although no aquatic insect species are listed within the plan area, they form the prey base for juvenile salmonids, therefore the maintenance of a healthy and naturally composed aquatic invertebrate community is of paramount to the listed salmonids. The HHCP describes 100 ft buffers as being adequate for maintenance of instream invertebrate populations (HHCP, Vol IV, Part D, 1.3.1.2). This is true for Class I, II, and III streams, but has been applied only to Class I streams. This makes no ecological sense and instead represents an expedient choice for stream class cutoff. If this standard is to be applied to Class I streams, as proposed by PALCO, then it should be applied to all Classes since they all contribute water, organic material, and invertebrate community activities to downstream units. In addition, the RMZs, as described in the HHCP do not meet the 100 ft minimum as there is only 30 feet of no-cut buffer around Class I streams and less around IIs and IIIs.

FS-
5

b) Fish

There is considerable attention focused on the coho salmon within the HHCP and the DEIR/S. However, the salmon are put at considerable risk by the logging practices proposed and this risk will not be mitigated by the strategies proposed. Specifically, for slopes greater than 30%, roadbuilding and clearcut logging will almost certainly result in a gradual increase in fine sediment delivery and failure of slopes (mass wasting) into creeks that feed into salmon-bearing streams. Riparian buffers of the width proposed will not halt a hillside of mud from entering a stream. Logging and skid trail construction will occur within so-called ephemeral streams, which has in the past resulted in sediment delivery into the water courses downstream and downhill from the ephemeral stream basins. Sediment delivery is a normal process, it is the large scale of it here that is of concern. Unhatched and juvenile fish and many aquatic invertebrates will be suffocated by excessive fine sediment delivery. In addition, as deeper pools fill in with sediment, essential cool water habitat will be lost to the fish. Deep cool pools and mud-free gravel are essential to salmonid reproduction. Fine and coarse sediment delivery that is characteristic of road-building and clearcut logging operations will pose an immediate and avoidable risk to salmonid reproduction, and therefore the species, in the absence of effective buffers and silvicultural practices that do not deliver fine sediment into the water. Because streams on the holdings have ceased to function as habitat for rare and endangered fish and amphibians because of clearcut logging and road-building activities, further elimination of these habitats by the proposed activities can not be considered to pose anything but significant risk to these species at the local (PALCO lands) and regional scale.

FS-
6

c) Clean water

Watersheds on PALCO land, such as the Yager Creek, are already listed by the Environmental Protection Agency as impaired (303[d], EIS/R, p. 3.4-13). The EIS/R for these plans acknowledged the conflict that may arise between EPA's TMDLs for PALCO land streams and the current HHCP/SYP. However, the EIS/R dismissed the relevance of this conflict for the impact analysis.

FS-
7

However, under NEPA and CEQA, near-future actions by agencies that are known to be inevitable and relevant to the planning area should be considered within the impact analysis. Therefore, the EIS/R should include within its findings, a conclusion regarding the relationship between the water quality impacts likely under the HHCP/SYP and the TMDL process that will begin next year (for Yager Creek).

FS-
7
CON.

The SYP for these lands allows logging practices that will further impair these watersheds, providing muddied waters to downstream users. Although this is not an endangered species issue, the traditional water uses for these water courses will be affected by the SYP and therefore should be addressed by an EIR/S for the plan. Clearcut logging on steep slopes (>30% and >60%) and 400 miles of new roads proposed in the SYP will result in increased fine sediments to downstream users being delivered from watersheds with steep slopes and logging in ephemeral streams. This is already the case for people living downstream of PALCO logging operations in the Mattole River watershed and there is no reason to think that the situation will improve given the similarity between current logging practices and those proposed in the SYP.

FS-
8

"Best management practices" are theoretically being used now and will be theoretically used under the SYP. But, there is no comprehensive evaluation within the EIS/R of these practices or the implementation of them by PALCO, therefore, it is reasonable to conclude that the situation will at least stay the same and could easily get worse. The proposed limits on logging and roadbuilding are not sufficiently stringent to keep PALCO from conducting these activities during wet periods in the winter. Visual analysis of stream turbidity is far from the level of analysis needed and that can be practically accomplished for determination of sediment delivery from roads during the winter. The increased risk of mass-wasting due to logging on steep (>30%) slopes and the continued and increasing delivery of sediment from roads and logging and skidding in ephemeral stream courses will, cumulatively and severely, impair streams emerging from PALCO land, resulting in a significant and avoidable impact on clean water resources for other members of the public. These effects will not be mitigated by the practices described in the SYP/HHCP. The HHCP itself describes 2/3 of landslides being attributable to their recent logging activities and a direct relationship between severity of logging practice (tractor-based clearcutting being most severe) and # of sediment delivery areas (HHCP, Vol IV, Part D, 1.3.1.6). PALCO cites a comparison between a 1947 photo set and a 1997 photo set showing similar number of landslides as evidence for unchanging landslide occurrences when old-growth is removed, but also acknowledges that 1947 followed a dry spell, while 1997 was an El Nino year, negating their conclusion of lack of management effects (HHCP, Vol IV, Part D, 1.3.1.6). The HHCP lacks requirements for action that would help to minimize sediment delivery into watercourses. For example, the plan "anticipate[s] that all sites assigned a high or medium priority rating based on the audit of potential sediment sources will be storm-proofed over the first 30 years...." (HHCP, Vol. IV, Part D, 1.2.1.1). This is basically allowing voluntary compliance with an important mitigation feature of the HHCP. Given the history of lack of compliance of PALCO, it is reasonable to conclude that this feature will not be a priority, which will result in this mitigation feature having no effect on the impacts of this plan. The surveillance strategy to determine sediment delivery risks is entirely inadequate (HHCP, Vol. IV, Part D, 1.2.1.2), jeopardizing the effectiveness of the storm-proofing strategies that will theoretically be employed. The sediment audit will consist of guesses made by a "trained observer" as to likelihood of sediment delivery and for volume of delivery (HHCP, Vol. IV, Part D, 1.2.1.2). Considering that computerized sediment budgeting tools exist and are used by agency personnel, it is reasonable to suggest that this guess-work will not approach the

FS-
9

needed accuracy for such a complex task and should employ other computational tools to assess risk to watercourses posed by existing and future logging features. Because of the vagueness of many of the road-related standards in this section of the HHCP, it is difficult to see how practices will be monitored and enforcement take place. Given that HCPs depend on the effectiveness of mitigation strategies, the risk posed by road-related activities under the HHCP lead inescapably to a conclusion that avoidable and significant impacts to fish habitat and clean water will occur throughout the planning area from roads.

FS-
9
CON.

Riparian Buffer

The expected function of riparian buffers in landscapes impacted by logging is to provide habitat and shelter for riparian zone dependent species, to protect streams from sun-induced temperature increases, to reduce sediment delivery, and to potentially protect against the effects of land uses on adjacent upslope zones. The streamside management zones provided by the HHCP and the potential amendments through legislative action taken by California in the summer of 1998 will not function as riparian buffers as described above.

FS-
10

a) Habitat: Only very limited function as habitat will be provided by the riparian buffers as described in the HHCP. 30 foot widths are inadequate primary buffer zones for the functions required, because of logging allowed in the remaining management zones of the buffer and upslope clearcut logging. If selective logging standards were employed outside the buffers that, for example, left all trees over 40" dbh, the majority of trees over 20" and retained >50% canopy closure and >300 sq ft basal area/acre, then these buffers could function as habitat refugia and corridors, as proposed. However, the proposal in the HHCP and the alternatives described in the EIS all allow for clearcut or near-clearcut (e.g., seed tree) logging as the primary extraction protocols. The standards from FEMAT rejected within the HHCP, but addressed in the EIS, would be better than those described in the HHCP, in terms of provision of riparian habitat, but would allow skid trail construction and logging within riparian zones of ephemeral (Class III) streams which would impact their use by amphibians, mammals, and birds.

b) (Re: EIS/R Section 3.4.2.2, p. 42-44) Shade is an important function of streamside buffers. Temperature increases in salmon-bearing streams are responsible for declining populations due to increased mortality among salmon fry and juveniles. Most of the water flowing down Class I streams comes from Class II tributaries; similarly, most of the water flowing down Class II streams comes from Class III tributaries. Therefore, temperature increases in Class II and III streams will have direct impacts on the functioning of Class I streams as salmon habitat. The protective measures in the HHCP provide inadequate temperature buffering for Class II and III streams, due to their narrow width and low standards for tree retention. Primary buffer widths from 0 to 10 feet and a secondary selectively logged zone of 100 feet will not provide adequate shade for streams across PALCO land. Most riparian zones have been logged to the waterline already and do not have late seral or old growth forest present, therefore, any additional logging within 100 feet of Class II and III streams will only reduce the overall shading of these watercourses and will negatively impact downstream salmon spawning habitat. Because of the retention standards described for these streams (HHCP, Vol. IV, 1.2.2.3 & 1.2.2.4), the buffers will not provide the maximum shading practicable. This standard could be reached with much wider buffers (>150') that would still allow for extensive logging on the holding.

FS-
11

Because the water delivered to all classes of streams is, at some point, either surface or ground water, the temperature of these waters is also critical to maintenance of stream temperatures. If the land is

FS-
12

cleared of forest, then the water retained in and released from surface soils into subsurface soils and nearby streams will have a higher thermal load (higher temperature) due to increased exposure to sun. Clearcut logging, and other methods of removing large quantities of standing forest, will result in higher temperatures in all downhill watercourses due to this effect. Therefore, adequate buffering of stream temperatures by streamside management zones would include consideration and management of upslope logging regimes. Ignoring this factor make wide shade buffers on Class I streams practically meaningless. In addition, clearcut logging removes most or all of the vegetation above the surface soil, exposing the ground to sun, and reducing the moisture in the soil. The absence of moisture in the soil and rotting forest components will result in much-reduced quantities of water to streams during the dry season. This will decrease the chance of salmonids successfully reproducing due to low water levels and the high temperatures that will inevitably accompany these low levels.

FS-
12
CON.

c) (Re: EIS/R, Section 3.4.2.2, p. 44-48) Sediment delivery from logging operations and road-building and use are concerns for aquatic systems recognized by the scientific community and in the HHCP. However, the practices intended to mitigate for sediment delivery under this plan are inadequate. The EIS recognizes the importance of sediment delivery from PALCO lands (p. 3.4-13) but considers the impact to be less than significant. This conclusion is based in part on a lack of needed information and in part on an assumption that BMPs would be followed and mitigation implemented and effective. The monitoring standard for determining whether an impact is occurring during the carrying out of a road-related activity is an increase in turbidity in a stream near the activity, as determined visually (e.g., EIS/R, p. 3.4-47). There are several ways to measure turbidity using inexpensive quantitative techniques that are readily available and known to undergraduate hydrologists and aquatic biologists. To not employ anything other than a visual check of water quality by whoever is on hand is ludicrous and in no way qualifies as a valid monitoring practice upon which rate and quantity of sediment delivery should be determined.

FS-
13

The HHCP permits cutting on slopes >50% (e.g., Vol. IV, Part D, 1.2.2.4, p. 38) outside the RMZ around Class III streams. The risk of mass-wasting and surface erosion increases rapidly with increase in slope aspect. Because logging, skidding, and road-building will occur within Class III streams, the opportunities for sediment delivery in pulses (e.g., mass-wasting), or gradually, are many. A reasonable mitigation for this high risk of sediment delivery to downstream water courses is to not carry out sediment delivering practices in the water courses and to buffer these water courses adequately with no-logging/equipment zones that extend to widths that have been shown previously to minimize impacts on aquatic resources (>100 ft).

FS-
14

Old-Growth and Residual

The HHCP/SYP recognizes that 2,236 acres of old growth and 22,074 acres of late seral forest will be clearcut in the first decade of the SYP (SYP, Vol. III, Part C). This drops off sharply in the second decade because these figures represent the majority of the remaining forest that has, or will soon attain, old-growth characteristics. There is no evidence that the effects on wildlife and water quality of clearcut logging can be mitigated by the replanting of the acres cleared with seedlings. There is ample evidence that clearcut logging leads to uniformly negative impacts on almost every index of well-being for forests. Because selective logging of only smaller and medium-sized trees is available as an alternative strategy that still provides income, this practice is not consistent with minimizing impacts of the proposed activities, nor is the mitigation adequate because of the lack of evidence that an old-

FS-
15

growth forest will emerge from a clearcut with seedlings planted in it. Adequate mitigation of the effects of logging across the landscape would consist of retaining those parts of the forests with the greatest current contribution to current forest health and water quality. Because large trees and stands of large trees can provide a huge variety of benefits for wildlife (endangered or not) and higher water quality for endangered wildlife and humans, their retention should be a priority in a plan to conserve forest habitat or to mitigate the effects of take of endangered species and their habitat. The opposite scenario is the case for the HHCP, which emphasizes commodity extraction over protection of habitat and other values from the forest and fails to mitigate for the removal of large trees as individuals or stands.

FS-
15
CON.

The HHCP/SYP lumps all trees over 40" dbh together as if they served the same ecological function. They do not, exposing a huge flaw in the overall strategy proposed for old-growth forcing a conclusion of inadequacy for any measures that deal with old-growth trees or stands. For example, marbled murrelets will not nest in a tree with a 41" dbh because there will be no branches (>11") that support its nesting. They will, however, nest in a tree 90" dbh because this tree is likely to have branches that match its nesting requirement. Therefore, these trees cannot be lumped together in a single logging strategy as they serve different ecological functions. Similarly, a tree growing next to a water course with a 41" diameter is going to serve very different functions than one with a 41" dbh near a ridgeline. The tree upslope will be older, will have a different branch structure, is more likely to function as an important part of the forest canopy and will serve entirely different ecological functions than the streamside tree. Rather than using one prescriptive standard for trees larger than 40", the trees in that class should be separated into more classes that will allow a determination of their retention rate that is based in their ecological value.

FS-
16

Monitoring

a) To Date

The Multi-Species Monitoring Study (HHCP, Vol. II, Part K) functions in part as a template for future monitoring studies and also as a source of certain information. The following is a list of problems with this study pointing to its inadequacy as a template for monitoring of the impacts of activities on the huge and diverse permit area.

FS-
17

- 1) Plot locations were selected according to a protocol that is not published and therefore has neither passed peer review, nor is it available for study within this EIS process (Part K, p. 2).
- 2) Reference points were not selected randomly so could be anywhere chosen by the permittee.
- 3) The WHR relationship algorithm used here and crosswalk between WHR and seral type have not received a thorough peer review and therefore are questionable for general application (Part K, p. 4).
- 4) The method of avian inventory is too limited to capture foraging, nesting, and reproductive behavior for all avian species within the holding. Actually, it fails completely as a general surveying tool because of limited time and frequency per plot, lack of applicability to species likely to be present, and over-dependence on the observers of unknown ability to detect a large range of behaviors and species in a short amount of time (Part K, p. 4).
- 5) The casual nature of the herpetofauna search (no arboreal searches, trees and shrubs) will lead to an underestimate of amphibian presence, as will a lack of such searches in riparian areas because of plot placement away from riparian areas (Part K, p. 4).

6) A single type of trap for small mammals is unlikely to capture the variety and abundance of species present in a given plot. For example, arboreal species will be poorly represented.

7) A diversity index that lumps plants and animals together is not appropriate for monitoring practices that result in massive disturbance, such as clearcut logging. An entirely new suite of species may appear that are suited to disturbance while the old suite, dependent on intact forest will have died or moved. Thus, although diversity may have remained the same, the diversity of species common or dependent on intact late successional forests will be depleted or absent. We have plenty of disturbed habitat species around, it is the late seral/old growth species that are in question here. Also, plants and birds will dominate such an index, swamping out the fewer mammalian and amphibian species, obliterating their importance in calculations and conclusions. This diversity index masks the important underlying processes of human-induced succession processes (Part K, p. 7-8).

8) The fact that 98 species were predicted and not detected (Part K, p. 10) and that so many were missing from the seral stage 4 to 6 (Table 5, p. 9), points to either the inadequacy of the WHR used or inadequacy of the sampling protocols. The fact that we don't know is enough to question the entire monitoring study.

Habitat-based guilds were used to replace individual species monitoring and mitigation/management practices. This may have some validity for plans affecting areas with no species at risk of regional or absolute extinction, but not for PALCO lands where listed species are present. PALCO has decided that guilds are preferable to individual species for HCP and SYP development (HHCP, Vol. II, Part L, p. 1). However, Section 10 requires that take not result in jeopardy and that it minimize and mitigate the impacts of the take. A plan that does not monitor or model the predicted impacts on listed species of certain practices for which the applicant is seeking a take permit has little chance of minimizing the impacts of these activities. It is, however, a cynical and convenient justification for practices that may annihilate the species sensitive to these practices if there are others within the guild that are less sensitive.

1) The HHCP confuses diversity over local scales in response to disturbance with overall biodiversity over a landscape and for a particular ecosystem type (in this case redwood and Douglas fir forests, Vol. II, Part L, p. 2).

2) An example of the problem of mixing "diversity" definitions is given in the HHCP, where in Eastern deciduous forests, interior species diversity declined in response to logging, while those preferring forest edge increased in diversity (Part L, p. 3, also Part L, p. 6).

3) The HHCP claims that an adequate biodiversity plan should "provide both for adequate representation of the entire spectrum of forest habitat types and for research designed to discover where patterns in the larger landscape are having an impact." (Part L, p. 4). The applicant fails to follow through on this generally good sentiment with plans for actual adequate representation of old growth and late seral forests, since they will log 2/3 of what little is left of it in the first decade. In addition, the applicant fails to provide a good research plan and measures that would be taken to compensate for negative impacts of logging and road-building (the study in Part K being cited as an example of what would be done).

4) The fire disturbance described (Part L, p. 4) is not at all similar in impacts to the disturbance that accompanies large-scale clearcutting, scale in time and space being especially important here.

5) The description of "late-successional" forests as consisting "of trees larger than 24 inches" and being multi-storied points to the overall optimistic attitude of the applicant to forest succession acting as mitigation for the removal of the forest under the plan (Part L, p. 5).

F S-

17

CON.

FS-

18

6) Section K data are described as severely limited here, yet are used anyway for subsequent analysis and are described elsewhere as a good monitoring study (Part L, p. 5).

6) The Multi-Species Monitoring Study revealed a decrease in mammalian species diversity with successional age. The literature points to the opposite (Part L, p. 6) suggesting that either the study was inadequate in scope and effectiveness, or the islands of late-successional habitat remaining on PALCO land are not actually functioning as habitat for the number of species that should be present. This is ample evidence that no further reduction in this habitat should take place in order to protect listed raptors and carnivores dependent on these small mammals. Also, since the take of this habitat type is avoidable and the avoidance will not result in irreparable or significant economic harm to the applicant, the take of old growth and late seral forests, stands, and trees should be prohibited.

7) The replacement of one set of herpetofauna by another with forest clearing points to the need for not lumping species counts together in guilds or diversity indices, for example the replacement of old-growth dependent amphibians with clearcut loving reptiles (Part L, p. 6).

8) The applicant's analysis of guilds "assumes that habitat guilds can be adequately described by the more common species" (Part L, p. 7). This may be fine for management plans that do not affect listed species, but for a plan that legally must mitigate and minimize for take of legally protected species, it is entirely inadequate. The conclusion being that the guild approach the applicant uses should not be considered as a support for the overall plan.

9) The guilds are acknowledged to be dependent on habitat categories that are "internally heterogenous" (Part L, p. 8), pointing to another weakness in this approach.

10) The surveying conducted and the WHR show little compatibility (Part L, p. 9) but both are used anyway for the formulation of guilds for seral-specific management design (p. 9, Table 6).

Clearcut Logging

Clearcut logging is proposed for 35,000 acres in the first decade alone. Approximately half of the ownership will have open forest (clearcuts) or young forests (replanted clearcuts) within the first decade, up from just over a quarter of the ownership currently (HHCP/SYP, Vol. III). This represents a massive impact on the landscape and is likely to have massive effects on the resident wildlife and increased risks of landslides and reduced water quality for downstream/downhill human neighbors. There is no reason to consider the potential re-growth of forests as actual mitigation for their destruction. In the usual context of an HCP, a reserve is set-aside as a block or in series of units (which constitute half of the ownership), the reserve being considered the mitigation for the impacts to the remainder. There is no reserve designation within the PALCO holdings after the acquisition that will compensate for the clearcut logging across the holding. For those parts of the holding that function as habitat (occupied or not) for listed species, this activity is an unmitigated take which could be minimized by eliminating clearcutting. This practice could be replaced by selective logging that retains a full range of tree sizes and forest functioning. If no standing reserve is designated within the plan as mitigation, then the mitigation must come in the form of standing forest retained during logging operations. In this case, the clearcut logging leaves no standing forest to mitigate across the landscape for the impacts of the logging. Because this practice is not legally required and could be changed to include mitigation procedures, it represents an avoidable impact on the forest landscape, with impacts to legally protected wildlife and neighboring human communities.

FS-

18

CON.

FS-

19

Assurances to Landowners and Adaptive Management

a) "No Surprises" (Assurances to Landowners) is a policy employed by the USFWS, but is also deplored by almost all academic scientists because of its preclusion of effective adaptive management practices. Although the USFWS Handbook for development of HCPs suggests adaptive management principles come into play in HCPs and the HHCP claims that they will, the actual situation is quite different. For example, if marbled murrelet populations decline in the permit area, "the Scientific Review Panel will be consulted" (HHCP, Vol IV, Part B, p. 43). The basic principle of adaptive management (as found in the scientific and management literature) is that if monitoring reveals that management activities are having a negative impact on a particular resource, then the practices are changed so that the impacts are reduced and eliminated. The draft Implementation Agreement states: "If additional conservation and mitigation measures are deemed necessary by USFWS and NMFS to respond to a Changed Circumstance [identified a priori in Vol IV, Part H] and such measures were not provided pursuant to the HCP, USFWS and/or NMFS will not require any new, additional or different conservation and/or mitigation measures from PALCO in addition to those provided for pursuant to the HCP without the consent of PALCO." (HHCP, Vol. VI, Part D, 6.1.6.4.3). Volume IV, Part H, discusses the possibility of natural disturbance and management-induced landslides affecting the physical structure of aquatic and terrestrial habitats. It does not include a description of the parameters for assessing populations of listed species available for permitted take and does not describe any procedures for dealing with a reduction in populations of listed species. This essentially means that if a listed species, such as the coho salmon, is facing regional extinction within the planning/permit area (PALCO lands) then there will be no contractual obligation for PALCO to change its activities to alleviate this situation. There is no similarity whatsoever of this standard with adaptive management. In fact, application of this standard alone poses a risk to listed species because it allows an open season, without restriction, on listed species habitat within the permit area. This is counter to rational conservation, the spirit of the Endangered Species Act (ESA), expectations of the public and scientists who have been involved in this process, and the Section 7 (ESA) limitations on HCP development and impacts.

FS-

20

b) Adaptive management

A reasonable management plan, and one which followed guidelines from the science of conservation biology (and even parts of the USFWS Handbook on HCP development), would include adaptive management at its core. Monitoring of the effects of management activities on physical and biotic characteristics of aquatic and terrestrial systems is not planned for in the HHCP (HHCP & EIS/R, Section 2.9, p. 2-75). There is also no plan or intention to modify management activities outside of very limited windows (such as Class I stream buffer sizes of 170 ft) if logging and road-building results in negative impacts to listed species for which the HHCP is intended to mitigate. This HHCP does not contain any management standards that would be considered standard for a reasonably complete and science-based management plan for such a large area and one which is critical habitat for so many listed species. Without the safeguard of adaptive management principles, it is unlikely that prescriptions set out in 1998 will accommodate all possible changes in stream and forest conditions and impacts on listed species that will ensure a reasonably low risk to these species for the next 50 years. In fact, it is almost certain that the principles that guide logging and road-building under this plan (addressed above) will cause one or more populations within the permitting area to go extinct. Given this likelihood, it does not seem reasonable to allow a plan under Section 10 (ESA) that will be

FS-

21

extremely limited in its potential to mitigate for the permitted practices. In fact, if true mitigation is sought, then inclusion of adaptive management principles should be welcome as they will ensure success of the mitigation. The permittee should not shy from such principles since it will provide assurances within the HHCP that the mitigation measures are adequate. If this turns out to be the case over the next 50 years, then PALCO would never face changes in management practices and mitigation measures because none would be needed given the apparently conservative nature of the procedures described in the HHCP (according to PALCO).

FS-
21
CON-

Recovery

There is no attempt in the HHCP to provide for recovery of listed species. Although it is not a requirement of the Act that this be done within an HCP, impacts must not jeopardize recovery. If no planning is conducted that would facilitate recovery, it is unlikely it will happen by accident. In addition, my conclusion from the HHCP/SYP review, as summarized above, is that recovery of certain species (especially the coho salmon and amphibians) will not occur on the PALCO holding. This is primarily because there is very likely to be a net and avoidable decline in populations of all listed species, thus recovery is unlikely. The USFWS Handbook for HCP development suggests that HCPs should provide for recovery of targeted species within the planning area. To approve this HCP (EIS/R, Alternative 2) will go against that recommendation because, not only is there no planning provision for recovery or monitoring to discover if there are declines, but the applicant has shown every indication in the past through knowingly criminal logging practices that recovery is not part of their thinking.

FS-
22

Fraser Shilling, Ph.D.

Ph.D. gained in 1991, Department of Biological Sciences, University of Southern California.
Expertise in amphibian reproduction, aquatic ecology, and landscape-scale conservation planning

Conservation Chair
Society for Integrative and Comparative Biology
(A 110 year old society of 2,200 professional biologists)

Program Coordinator
Sierra Nevada Network for Education and Research
Centers for Water and Wildland Resources
University of California, Davis
530-752-7859 (phone) 752-8345 (fax) fmshilling@ucdavis.edu